

This lesson is part of a larger, comprehensive school garden guide called **Minnesota School Gardens: A Guide to Gardening and Plant Science** developed by Minnesota Agriculture in the Classroom in 2013. The entire guide is available at www.mda.state.mn.us/maitc.



Grade

Middle School

Materials/Preparation

- ☐ Teacher Material A – Safety First – Responsibilities for a Safe Food Supply – one per teacher
- ☐ Teacher Material B – Responsibility Cards – one copy cut into pieces – one piece as assigned per team
- ☐ Assessment A – Safety First – one per student
- ☐ Assessment B – Team Book Page Rubric – one per student
- ☐ “You Better Wash Your Hands” – music video found at <http://foodsafety.ucdavis.edu/html/video.html>
- ☐ Computer with Internet access and sound
- ☐ Speakers
- ☐ Blank paper – two sheets per team, six teams
- ☐ Timer
- ☐ Crayons/markers/colored pencils – enough for the class
- ☐ Writing instruments

Fun Fact

The strawberry is not classified by botanists (people who study plants) as a true berry. True berries, such as blueberries and cranberries, have seeds inside. The strawberry, however has its dry, yellow “seeds” on the outside (each of which is actually considered a separate fruit).

Safety First – Responsibilities for a Safe Food Supply

Minnesota K-12 Academic Standards

Health	6.3.2	The student will demonstrate the ability to utilize resources from home, school, and community that provide valid health information.
Language Arts	6.14.2.2	Write informative/explanatory texts, as they apply to each discipline and reporting format, including the narration of historical events, of scientific procedures/experiments, or description of technical processes.

Summary/Overview

Students learn about food safety responsibilities by creating a children’s book.

Garden Connection

Food safety practices in the garden help reduce the risk of food-borne illnesses.

Background Information

To meet food safety standards and minimize consumer health risks, safety responsibilities exist for everyone involved in the food supply continuum. Several laws and protocols are in place to ensure a safe food supply. Good Agricultural Practices (GAPs) are environmental and operational conditions necessary for producing safe, wholesome fruits, vegetables, and livestock. Similar to GAPs are Good Manufacturing Practices (GMPs). GMPs establish quality systems for manufacturers to make sure their products meet specific requirements to create safe products. Hazard Analysis and Critical Control Points (HACCP) identifies points in food handling where contamination is likely to occur.

Objectives

- Identify food safety responsibilities in the food supply continuum.
- Compare and contrast Good Agricultural Practices and Good Manufacturing Practices.
- Explain the importance of Hazard Analysis and Critical Control Points.

Procedure

Interest Approach

Use the music video, “You Better Wash Your Hands,” found at <http://foodsafety.ucdavis.edu/html/video.html> to begin this lesson. The song is about sanitation and washing hands, which connects to some of the content later in the lesson. The food safety music videos can also be ordered in CD form from the website. If you don’t have the resources to show the video, there are audio options without the video on the website. Another option is to simply have a discussion about washing hands and the relationship between keeping our hands and food clean. Following the video, discuss the importance of good hand washing, sanitation, and the responsibility of producers to keep our food supply safe.

Summary of Content and Teaching Strategies

To keep up with new laws, rules, and information about food safety regulations and responsibilities, farmers, ranchers, and other producers involved in the agriculture industry constantly seek new information. They subscribe to magazines, search the web, work with their local extension agents, and are constantly learning new ways to keep food safe.

Brainstorm safety-related topics that are important for growing a garden. Ask students how they can learn more about those topics (Internet research, talk to farmers, food manufacturers, master gardeners, etc.).

Divide students into six groups to create the pages of a food safety book. Have students gather their supplies: blank paper, crayons, markers, and colored pencils. Each group will be responsible for creating a page for the book, including the cover, content, and illustrations. If groups are larger than three students, you may choose to have them create multiple pages.

When students move into their groups, give each team their assigned responsibility card (Teacher Material B). Tell each team they are responsible for including the content from their Responsibility Card, as well as illustrations, on their page. Set the timer for 20 minutes work time. Be sure to give them a five-minute warning before time is up.

Depending on your class size, you may adjust work time. As students work, circulate around the room to answer questions and guide students who need assistance.

When students are finished with their pages, they share the information with the class, thus teaching the class about their assigned safety responsibilities. Call each group to present in order beginning with Team 1, Team 2, and so on. This lets you review the content in order.



Review/Summary

Students lead the discussion by explaining what they have created on their pages. Guide the discussion by asking questions and facilitating the discussion. After each team presents, instruct the students to:

- Take a moment and think about what they just learned and what they may already know.
- Write their reflections on a sheet of paper.
- Share their thoughts with their group.

As a final recap, ask the class:

- What are the three main programs that help agriculturalists maintain their safety responsibilities in the food supply? (Good Agricultural Practices - GAP; Good Manufacturing Practices - GMP; Hazard Analysis and Critical Control Point - HACCP.)
- How do these programs help to ensure a safe food supply for all of us?
- Will programs, laws and regulations keep everything safe? Why are all the *people* in the food chain the biggest part of food safety?
- How can we use the information we learned today to make sure the produce grown in our garden is safe?

Modifications/Extensions

Safety Regulation Contamination: Set up an obstacle course using objects or landmarks like desks or hula-hoops, or if outside, trees and shrubs. Along the course, be sure there are some obviously contaminated elements ... dirt, dirty tools, doorknobs, balled-up facial tissue, etc. Give each student a handful of clothespins or stickers. While walking through the obstacle course, if the students see or touch something unsafe or unclean - they put a clothespin or sticker on their shirt to signify contamination. At the end of the game, the person with the most clothespins or stickers is the most contaminated. Use the results of the game to lead to a discussion about food safety and the quick spread of contamination within foods. If someone does not have any stickers or clothespins, ask them what they did to avoid becoming contaminated. Also ask the class what they could have done differently in order to prevent contamination.

Students have learned about national resources and programs that assist in their health. Now have students make a list of health-related resources in their home, school, and community. After students are done, have them compare their list with a partner. Finally discuss resources as a class.



Sources/Credits

Adapted from: National FFA Organization *Middle School Food and Agricultural Literacy Curriculum*, sponsored by the National Pork Board as a special project of the National FFA Foundation. Visit <https://www.ffa.org/documents/learn/MS.FS.1.5.pdf> to access the full-length version of this lesson.

Safety First – Responsibilities for a Safe Food Supply

To meet food safety standards and to minimize consumer health risks, safety responsibilities exist for agriculturalists involved in the food supply.

A. Food Sanitation: the process of keeping food processing and preparation areas clean.

B. Good Agricultural Practices (GAP): environmental and operational conditions necessary for producing safe, wholesome fruits, vegetables, and livestock.

- Specific guidelines for fruit, vegetable, and livestock producers to follow to ensure safe products.
- Guidelines for minimizing risks caused by potentially threatening sources that are part of the production process: soil, manure, cooling units, ice, transport vehicles, poor employee hygiene, etc.
- Practices like good hygiene of employees, clean storage facilities, water quality monitoring, record keeping for the farm operations, harvest and storage sanitation, safe handling of manure, following all on-farm safety practices and procedures, etc.
- Good Manufacturing Practices (GMP): Similar to GAP: establishes quality systems for manufacturers to ensure their products meet specific requirement for safe products.
- GMP is a government-regulated program.
- Record keeping, documentation, training, evaluation, and inspections help ensure that GAP and GMP are being implemented by businesses/operations.
- Hazard Analysis and Critical Control Points (HACCP): identifies points in food handling where contamination is likely to occur.
- HACCP provides steps to take to manage and reduce contamination of food, and applies to facilities and processes, like the process of packaging meat or a facility where ice cream is made.
- Larger processors are more likely to have a HACCP plan than small processors.
- HACCP is a government-regulated program.
- HACCP aims to prevent potential microbiological, chemical, and physical hazards in foods.

Responsibility Cards

<p>Team 1. Book cover</p> <p>You are also responsible for a title for the book – be creative!</p> <p>Introduction Page</p> <ol style="list-style-type: none"> 1. To meet food safety standards and minimize customer health risks, safety responsibilities exist for agriculturalists involved in the food supply continuum. 2. Food sanitation: the process of keeping the areas where food is processed and prepared clean. 	<p>Team 2. GAP Part A</p> <ol style="list-style-type: none"> 1. Good Agricultural Practices (GAP): environmental and operational conditions necessary for producing safe, wholesome fruits, vegetables, and livestock. 2. Specific guidelines for fruit, vegetable, and livestock producers to follow to ensure safe products. 	<p>Team 3. GAP Part B</p> <ol style="list-style-type: none"> 1. To ensure a safe food supply, producers are responsible for minimizing risks caused by potentially threatening sources that are a part of the production process: soil, manure, cooling units, ice, transport vehicles, poor employee hygiene 2. GAP include practices like good hygiene of employees, clean storage facilitates, water quality monitoring, record keeping for the farm operations, harvest and storage sanitation, safe handling of manure, following all on-farm safety practices and procedures, etc.
<p>Team 4. GMP</p> <ol style="list-style-type: none"> 1. Similar to GAP: Good Manufacturing Practices (GMP): establishes quality systems for manufacturers to make sure their products meet specific requirements for safe products. 2. GMP is a government-regulated program. 3. Record-keeping, documentation, training, evaluation and inspections help ensure that GAP and GMP are being implemented by businesses/operations. 	<p>Team 5. HACCP Part A</p> <ol style="list-style-type: none"> 1. Hazard Analysis and Critical Control Points (HACCP): identifies points in food handling where contamination is likely to occur. 2. HACCP provides steps to manage and reduce the contamination of food, and applies to facilities and processes like meat or ice cream. 	<p>Team 6. HACCP Part B</p> <ol style="list-style-type: none"> 1. Larger processors are more likely to have a HACCP plan than small processors. 2. HACCP is a government-regulated program. 3. HACCP aims to prevent potential microbiological, chemical, and physical hazards in foods.

Name _____



Safety First

Read each statement and circle the letter next to the correct answer.

1. Food sanitation is the process of keeping food processing and preparation areas clean.
☐ True ☐ False
2. Two potential risks to supplying safe food identified by Good Agricultural Practices are...
 - a. soil and employee hygiene.
 - b. temperature and air pressure.
 - c. population and salary rates.
3. Good Agricultural Practices and Good Manufacturing Practices are not government-regulated programs.
☐ True ☐ False
4. Hazard Analysis and Critical Control Points (HACCP) aims to prevent potential _____ hazards to our foods.
 - a. chemical
 - b. biological
 - c. Microbial
 - d. all of the above
5. _____ identifies points in food handling where contamination is likely to occur.
 - a. GMP b. GAP c. HACCP d. all of the above

Name _____

Team Book Page Rubric



	0	5	10	Total
Content	The content on the page does not reflect the content provided in class.	Most of the content is included, but some has been left out.	All of the content has been included in the book page.	
Neat/Creative	Book page is messy, hard to read, not colorful, not presentable.	Book page is somewhat neat, colorful, presentable.	Book page is very neat, creative, colorful, and presentable.	
Complete	Book page is incomplete, did not finish the assignment in the time provided in class.	Book page is somewhat complete, mostly finished the page except for minor details to the illustration or text.	Book page is complete, finished assignment in the time frame provided in class.	

Comments:

Total Score

